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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,820	03/18/2004	Steven A. Brown	068267.000103	7020
7590	05/12/2006		EXAMINER	
BRACEWELL & PATTERSON, L.L.P.			DOOLEY, JAMES C	
P.O. BOX 61389				
HOUSTON, TX 77208-1389			ART UNIT	PAPER NUMBER
			3634	

DATE MAILED: 05/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/803,820	<b>Applicant(s)</b> BROWN ET AL.	
	<b>Examiner</b> James C. Dooley	<b>Art Unit</b> 3634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-12 and 14-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-12 and 14-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

This Final Office Action is mailed in response to amendment filed March 8, 2006, wherein claims 1, 3-4, 7-12, and 14-22 were amended, claims 2 and 13 were canceled, and claims 5-6, and 16-17 were presented as original.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3, 5-7, 9-10, 12, 14, 16-18, and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wingo (US 6,357,604) alone. Wingo discloses a semiconductor wafer carrier (11) having a plurality of rails (12, 14), each rail having a plurality of teeth (24, 26), and each tooth having a raised support surface (30) for supporting silicon wafers. Wingo discloses the raised support structure to be a ledge, shown as rectangular with right angle intersections between the upper surface and

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sidewalls (fig. 2). Wingo has also disclosed the ledge can be of other configurations (col. 5 ln. 35-37). Applicant has disclosed that the sharp edges of the raised surface of Wingo cause stress concentrations resulting in slip. Wingo has not disclosed that ledge has sharp edges; although from figure 2 it appears that the support surfaces (30) form right angles with the teeth (24,26). Wingo has not disclosed any motivation to provide right angles connecting the support surfaces to the teeth. A Person of Ordinary skill in the art is the "problem solver and not the user of the solution" (*Systematic Tool & Machine Co. Walter Kiddie & Co., Inc. 555 F.2D 342, 348, 193 USPQ 587, 592*).

Therefore a person of ordinary skill in the art would be familiar with the process of constructing a semiconductor wafer carrier and would be aware that the right angles connecting the ledges to the teeth would be formed using conventional silicon carbide grinding equipment, as disclosed by Wingo (Col. 6 lines 58-66). Accordingly, it would have been obvious to one with ordinary skill in the art at the time of the invention that the same grinding equipment used to make the ledges could also be used to form a radius on the ledge. Many motivations for providing a radius can be considered: facilitating inserting wafer into slot and onto the support surface, avoiding scratching the wafer, or simply to improve the aesthetic appearance of the carrier.

Regarding claims 3, 4,14,15, Wingo discloses that normally the teeth are between 20 and 150mm (col. 4 ln. 51-53).

Regarding claims 5-6 and 16-17, Wingo has disclosed that the ledge may embody many configurations (col. 5 ln. 35-37). Accordingly, it would have been obvious

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to one with ordinary skill in the art at the time of the invention to form an edge of any radius. Applicant is referred to *In re Aller*, where the federal circuit court decision states,

*[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” (220F.2d 454, 456, 105 USPQ 233, 235)*

The exact radius of the chamfer is immaterial as one with ordinary skill in the art could easily discover optimal dimensions for a variety of conditions.

Regarding claims 7, 9, 18, and 20, Wingo discloses the support structure to extend from the front tip of the tooth to a distance at least 70 or 80% the length of the tooth (col. 4 ln. 57-58).

Regarding claim 10 and 21, Wingo discloses that the rack is made of silicon carbide (col. 6 ln. 2).

Regarding claim 11 and 22, Wingo discloses the rails to be a monolithic structure (col. 6 ln. 2-3).

Regarding claim 12, Wingo discloses a generally planar plate (10) with the support rails (12,14) extending vertically therefrom, each rail having a plurality of teeth (24, 26), and each tooth having a raised support surface (30) for supporting silicon wafers. Wingo does not disclose the support surfaces (30) to form a radius intersecting the teeth; also Wingo does not disclose the support surfaces to form a right angle intersecting the teeth. Accordingly, it would have been obvious to one with ordinary skill in the art at the time of the invention to include a radius on the support surface edges, so as to prevent scratching wafers held on the rack.

***Allowable Subject Matter***

Claims 4, 8,10,15,19,22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicant's arguments with respect to claims 1, 3, 5-7, 9-10, 12, 14,16-18, and 20-21 have been considered but are moot in view of the new grounds of rejection. The new grounds of rejection were necessitated by amendment adding "and extends along" in line 13 of claim 1, and such that...to the tooth" in lines 9-10 of claim 12.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to James C. Dooley whose telephone number is 571-2721679. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Chilcot can be reached on 571-272-6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
James C Dooley  
Examiner  
Art Unit 3634

May 10, 2006

  
SARAH POROL  
PRIMARY EXAMINER